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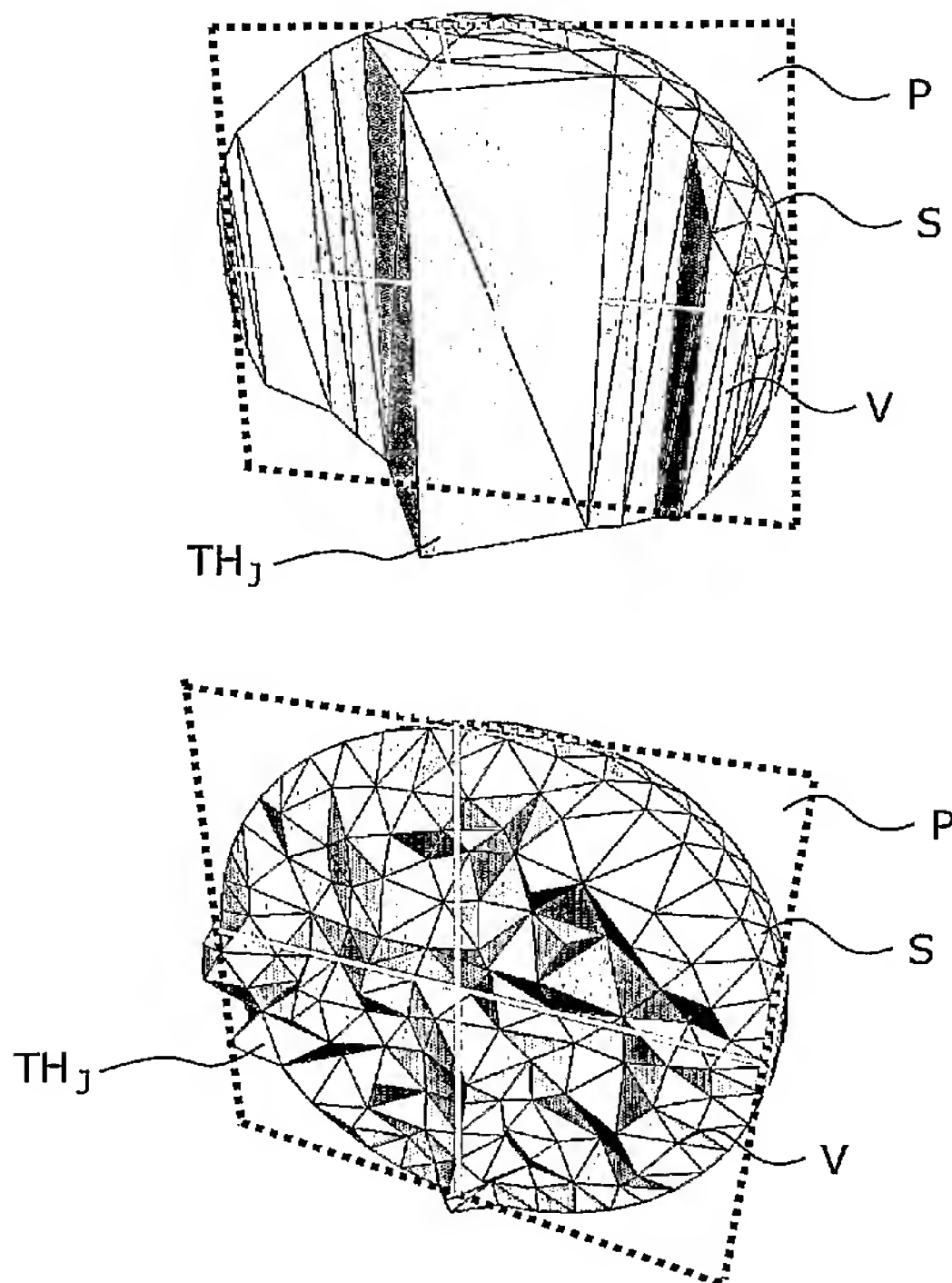
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(54) Title: MESH MODELS WITH INTERNAL DISCRETE ELEMENTS



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(57) Abstract: An image processing system having image data processing means of segmentation of an object of interest using an unstructured deformable mesh model composed of surface ( $T_j$ ) and internal ( $TH_j$ ) discrete elements, and further means of refining said mesh model by automatically dynamically adapting the size of the internal discrete elements to the local variation of size of the surface discrete elements. This system has means for acquiring size information ( $L_j$ ) related to the surface discrete elements in order to evaluate the optimal size to be assigned to the internal discrete elements and for propagating this size information from the surface discrete elements to the internal discrete elements while new internal discrete ( $TH_j$ ) elements are created during the refinement process by insertion of new vertices inside said internal discrete elements.



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